

## MINIMUM CORE SUBJECT AREAS: INFORMATION ENGINEERING

AREA	SUBJECTS / DESCRIPTION	RECOMMENDED CONTACT HOURS
<b>A recommendation of 40 hours each in 6 out of 9 areas below.</b>		
<b>1. Data structure and algorithms</b>	- selected topics on abstract data types, trees, priority queues, sorting, graph algorithms, analysis of algorithms, etc.	40
<b>2. Data Engineering</b>	- Selected topics on database, data modelling, data analysis techniques, etc.	40
<b>3. Computer programming</b>	- selected topics on Problem Solving and Programming, Internet Applications Development, Mobile Applications Development	40
<b>4. System architecture and organization</b>	- selected topics on Computer Organization, Computer Architecture, Operating Systems	40
<b>5. Software engineering</b>	- selected topics on software engineering processes, software design methodologies, system integration, software testing and maintenance, software quality management, software project management, etc.	40
<b>6. Network computing</b>	- selected topics on computer networks, digital networks, distributed systems, Internet of Things, etc.	40
<b>7. Information security and management</b>	- selected topics on cryptographic algorithms, Internet security, e-commerce protocols, security management, data privacy and data protection, related statutory / regulatory compliance, etc.	40
<b>8. Digital communications</b>	- selected topics on digital information communications, mobile systems, telecommunications switching and networking, etc.	40
<b>9. Signal processing</b>	- selected topics on algorithms in signal processing such as Fast Fourier transform and finite impulse response filter etc., image / video coding and processing, etc.	40